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PATENT APPLICATION

DOCKET NO. 10991765-1

**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

INVENTORS: Robert A. RUST et al.

SERIAL NO.: 09/678,210

GROUP ART UNIT: 2841

FILING DATE: September 26, 2000 EXAMINER: BUI, Hung S

**TITLE: METHODS AND APPARATUS FOR REDUCING THE
OPPORTUNITY FOR ACCIDENTAL REMOVAL OR INSERTION OF
COMPONENTS**

**MAIL STOP NON-FEE AMENDEMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ARLINGTON, VA 22313-1450**

SIR OR MADAM:

This Response is to the Office action dated September 24, 2003.

Claim Summary:

Claims originally present: 1-29.
Claims previously canceled: none.
Claims previously amended: none.
Claims previously added: none.
Claims hereby provisionally canceled: 21-29.
Claims hereby amended: 9-11 and 16.
Claims hereby being added: none.
Claims hereby provisionally elected for prosecution: 9-15.
Claims remaining: 1-20.

(Continued on next page.)

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S/N: 09/678,210
Case 10991765-1
Amendment "A" - Election

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Robert A. Rust

Confirmation No.: 6310

Application No.: 09/678,210

Examiner: BUI, Hung S.

Filing Date: 9/26/2000

Group Art Unit: 2841

Title: Methods and Apparatus for Reducing The Opportunity For Accidental Removal or
Insertion of Components

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER FOR RESPONSE/AMENDMENT

Sir:

Transmitted herewith is/are the following in the above-identified application:

- (X) Response/Amendment () Petition to extend time to respond
() New fee as calculated below () Supplemental Declaration
(X) No additional fee (Address envelope to "Mail Stop Non-Fee Amendment")
(X) Other: Return Receipt Postcard (fee \$)

CLAIMS AS AMENDED BY OTHER THAN A SMALL ENTITY						
(1) FOR	(2) CLAIMS REMAINING AFTER AMENDMENT	(3) NUMBER EXTRA	(4) HIGHEST NUMBER PREVIOUSLY PAID FOR	(5) PRESENT EXTRA	(6) RATE	(7) ADDITIONAL FEES
TOTAL CLAIMS	20	MINUS	29	= 0	X \$18	\$ 0
INDEP. CLAIMS	3	MINUS	5	= 0	X \$86	\$ 0
[] FIRST PRESENTATION OF A MULTIPLE DEPENDENT CLAIM					+ \$290	\$ 0
EXTENSION FEE	1ST MONTH \$110.00	2ND MONTH \$420.00	3RD MONTH \$950.00	4TH MONTH \$1480.00		\$ 0
OTHER FEES						\$
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT						\$ 0

Charge \$ 0 to Deposit Account 08-2025. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37. CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Date of Deposit: 10-Oct-2003

Typed Name: Louisa B. Reid

Signature: *Louisa B. Reid*

Respectfully submitted,

Robert A. Rust

By *John S. Reid*

John S. Reid

Attorney/Agent for Applicant(s)
Reg. No. 36,369

Date: 10-Oct-2003

Amendment "A"

Please cancel claims 21-29, without prejudice; please amend claims 9-11 and 16 as indicated below. The state of the claims following this Amendment "A" is as follows:

Claim 1 (original). A securing apparatus configured to secure a coupling of a first connector to a compatible second connector, the apparatus comprising:

a moveable securing member configured to be moved from a first position which prevents the first and second connectors from being decoupled, to a second position which allows the first and second connectors to be decoupled; and

an actuator configured to move the securing member between the first and second positions, the actuator being responsive to an authorization command.

Claim 2 (original). The securing apparatus of claim 1, and wherein the first connector defines a first receiving opening configured to receive the securing member, the second connector defines a second receiving opening configured to receive the securing member, and wherein when the connectors are coupled when the receiving openings are at least partially in alignment.

Claim 3 (original). The securing apparatus of claim 1, and wherein the actuator comprises a solenoid.

Claim 4 (original). The securing apparatus of claim 3, and wherein the solenoid is an electrical solenoid, and further wherein the solenoid is configured to move the securing member to the first position when the solenoid is under power.

1 Claim 5 (original). The securing apparatus of claim 1, and further comprising a securing
2 member sensor configured to detect when the securing member is in the first or the
3 second position, and to generate a position signal in response thereto.

4
5 Claim 6 (original). The securing apparatus of claim 5, and wherein the position signal is
6 used to notify a user of the status of the securing member.

7
8 Claim 7 (original). The securing apparatus of claim 1, and wherein the authorization
9 command is generated by a user.

10
11 Claim 8 (original). The securing apparatus of claim 1, and wherein the authorization
12 command is generated automatically by a control unit, and wherein the control unit is
13 configured to remove the first and second connectors from service prior to authorizing
14 moving the securing member to the second position.

15
16 Claim 9 (currently amended). A system comprising an array of modules and a plane,
17 each module having a first connector configured to couple with a compatible,
18 corresponding second connector which is mounted to the plane, and at least one
19 interlock device, the interlock device comprising a securing member configured to be
20 moveable to a first position to engage an associated module and thereby arrest relative
21 movement between the associated module's first connector and the corresponding
22 second connector, the securing member being further configured to be moveable to a
23 second position in response to an authorization command to disengage the associated
24 module and thereby allow relative movement between the associated module's first
25 connector and the corresponding second connector.

1 Claim 10 (currently amended). The system of claim 9, and further comprising an
2 actuator configured to move the securing member between the first and second
3 positions in response to the authorization command.

4
5 Claim 11 (currently amended). The system of claim 10, and further comprising a
6 controller having a diagnostic program, the diagnostic program being configured to
7 perform diagnostics on the associated module and to generate the authorization
8 command as a service signal when the diagnostic program determines that the
9 associated module should be physically removed from the system for service, and
10 wherein the service signal is used to cause the actuator to move the securing member
11 from the first position to the second position.

12
13 Claim 12 (original). The system of claim 11, and wherein the controller is further
14 configured to cause the associated module to be removed from service with respect to
15 the plane prior to causing the actuator to move the securing member from the first
16 position to the second position.

17
18 Claim 13 (original). The system of claim 9, and further comprising a securing member
19 sensor configured to detect when the securing member is in the first or the second
20 position, and to generate a position signal in response thereto.

21
22 Claim 14 (original). The system of claim 13, and wherein the position signal is used to
23 signal to a user whether the securing member is in the first or the second position.

24
25 Claim 15 (original). The system of claim 13, and wherein the securing member sensor is
supported by the at least one module.

1 Claim 16 (currently amended). A method for securing a first connector to a second
2 connector, comprising:

3 providing an arresting surface configured to restrict movement of the first
4 connector when the arresting surface is contacted by a force applied to the first
5 connector;

6 providing a moveable securing member which is configured to move between a
7 first position and a second position in response to an authorization command;

8 moving the securing member to ~~[[a]]~~ the first position which allows relative
9 movement between the connectors;

10 moving one of the connectors relative to the other connector to bring the
11 connectors onto mating contact;

12 providing an authorization command to move the securing member from the first
13 position to the second position; and

14 in response to the authorization command, moving the securing member to the
15 second position in proximity to the arresting surface to thereby restrict relative movement
16 between the first and second connectors.

17
18 Claim 17 (original). The method of claim 16, and further comprising detecting the
19 position of the securing member, and reporting the position of the securing member to a
20 controller.

21
22 (Continued on next page.)
23
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25

1 Claim 18 (original). The method of claim 16, and further comprising:

2 giving a second authorization command to move the securing member back to
3 the first position;

4 moving the securing member back to the first position in response to the second
5 authorization command; and

6 moving one of the connectors relative to the other connector to move the
7 connectors out of mating contact.

8
9 Claim 19 (original). The method of claim 18, and further comprising removing the
10 connectors from service prior to moving the securing member back to the first position.

11
12 Claim 20 (original). The method of claim 18, and further comprising notifying a user
13 when the securing member has been moved back to the first position.

14
15 Claims 21-29 (cancelled).

16
17 (End of Amendment "A")
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25